RSAC 2025 Conference

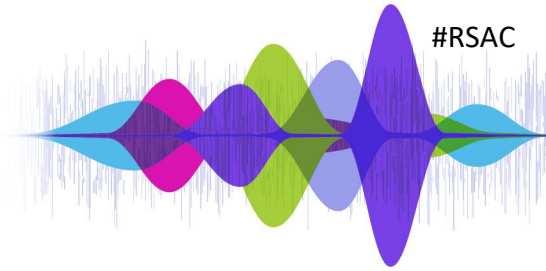
Many Voices.
One Community.

SESSION ID: APP-M05

DevSecOps Revolution: Unleashing Generative AI for Automated Excellence

Ravi Kadiri
Senior Security Architect
Amazon Web Services

Satya Vajrapu
Senior Partner Solutions Architect
Amazon Web Services



Disclaimer

Presentations are intended for educational purposes only and do not replace independent professional judgment. Statements of fact and opinions expressed are those of the presenters individually and, unless expressly stated to the contrary, are not the opinion or position of RSA Conference LLC or any other co-sponsors. RSA Conference LLC does not endorse or approve, and assumes no responsibility for, the content, accuracy or completeness of the information presented.

Attendees should note that sessions may be audio- or video-recorded and may be published in various media, including print, audio and video formats without further notice. The presentation template and any media capture are subject to copyright protection.

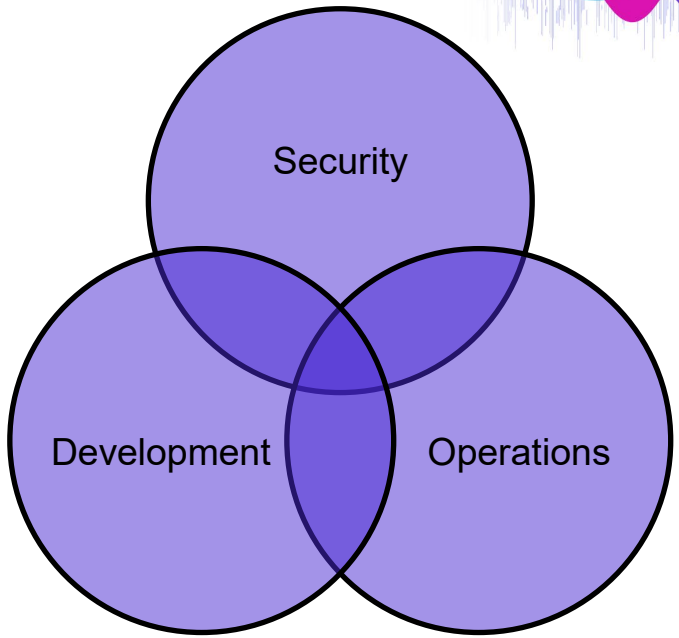
© 2025 RSA Conference LLC or its affiliates. The RSAC and RSAC CONFERENCE logos and other trademarks are proprietary. All rights reserved.

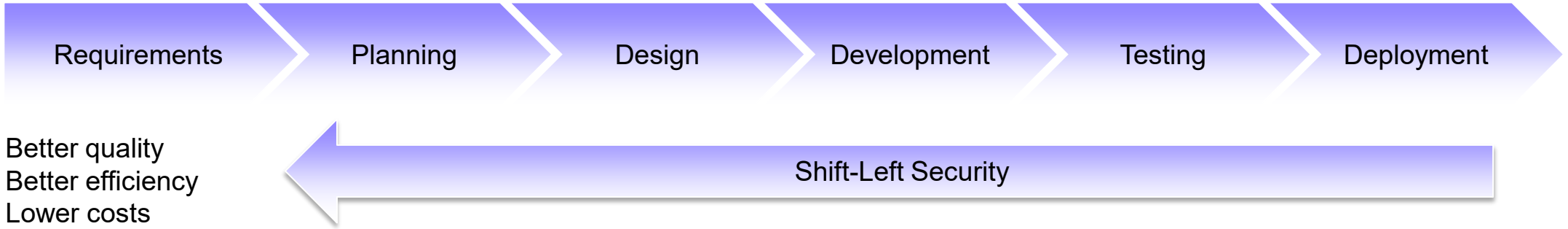
RSAC 2025 Conference

DevSecOps: Beyond the Buzzword

Demystifying DevSecOps…

DevSecOps extends DevOps by integrating security practices at every phase of the development and operations, from the start rather than an afterthought.

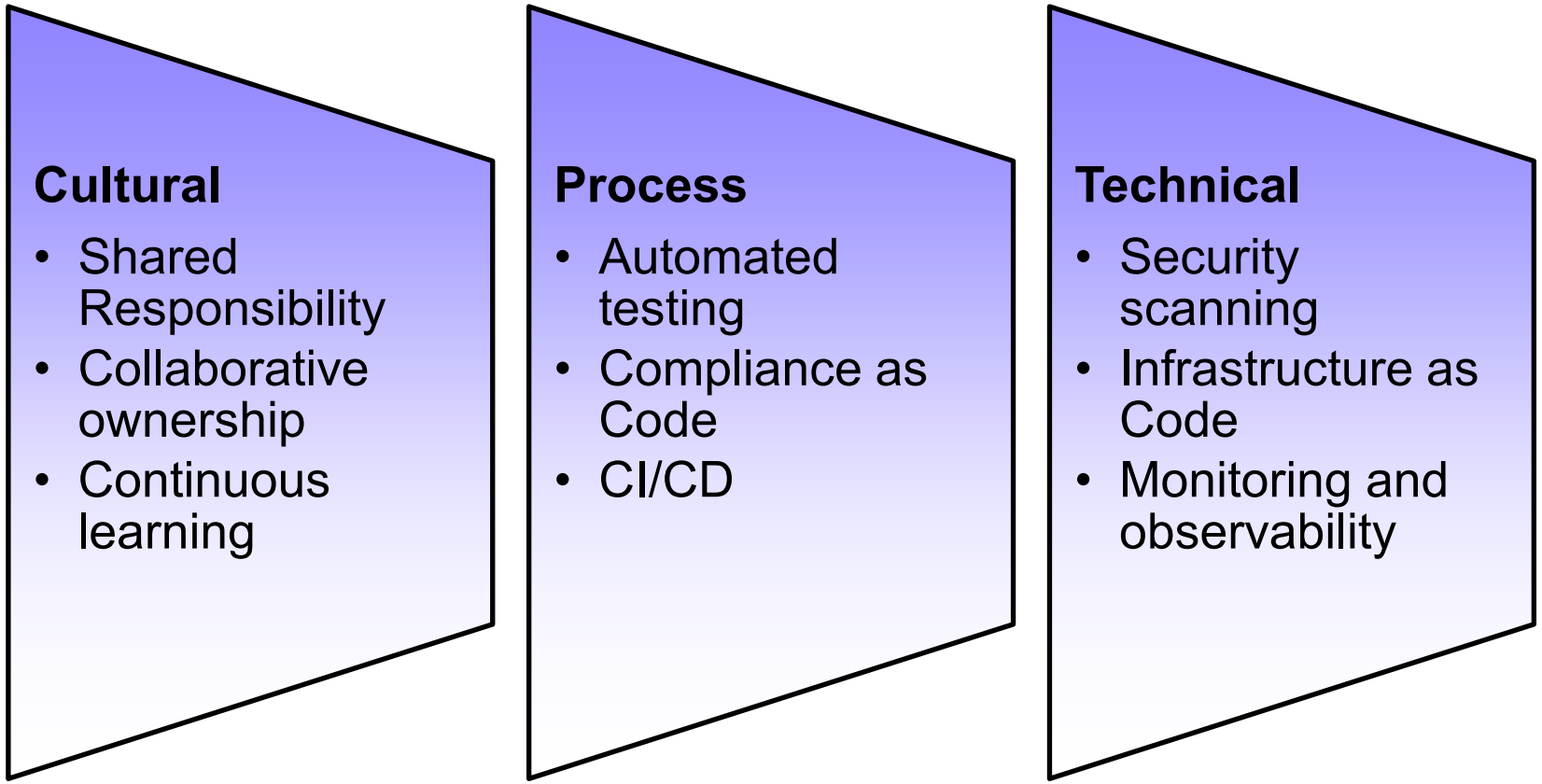




Better quality
Better efficiency
Lower costs
Lower risks

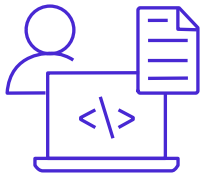
© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

DevSecOps – Key Components

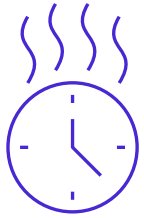


© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

Current Challenges in DevSecOps

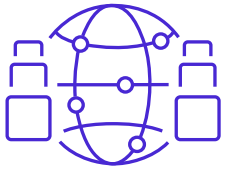


Developer shortage



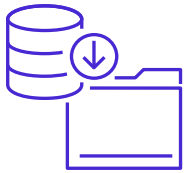
Time spent on undifferentiated code

Learning curve



Appropriate use of open source

Secure code



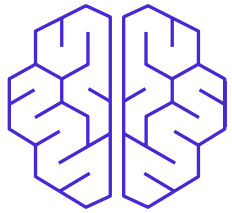
Data privacy

© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

RSAC 2025 Conference

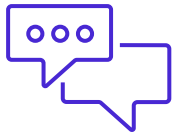
Enter Generative AI: The DevSecOps Game Changer

Let us recall…

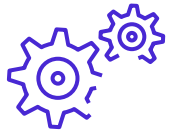


Generative AI

is powering innovation that is transforming businesses



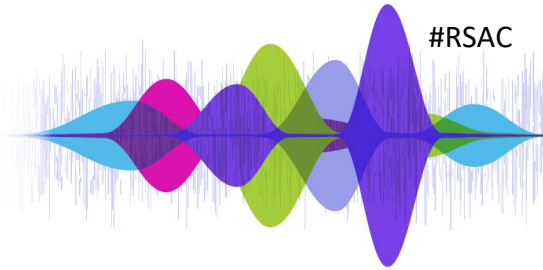
New experiences
through conversational interfaces



Boost productivity
through code and content creation

Deliver insights
from data and share knowledge

Creativity
in product development



aws
© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

GenAI impact in software development

Code Intelligence
- Context-aware code generation
- Best practice suggestions

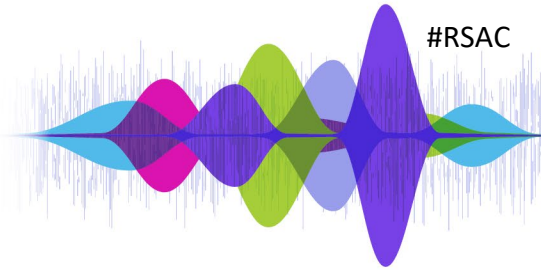
Documentation evolution
- Living documentation creation
- API documentation generation

Intelligent testing
- Edge case identifications
- Test coverage analysis

Operational Enhancement
- Root cause analysis
- Automated troubleshooting

© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

GenAI: Enabling modern DevSecOps



Automated code generation

- Security-first code creation
- Security validations
- Automated vulnerability detection

Intelligent infrastructure management

- Operational insights powered Infrastructure as Code (IaC)
- Smart compliance monitoring
- Predictive resource orchestration
- Cross-Service anomaly correlation

AI-Driven CI/CD

- Automated deployment risk assessment
- Self healing pipeline

aws
© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

GenAI DevSecOps Use Cases

Intelligent Infrastructure Management

- Operational insights powered Infrastructure as Code (IaC)

Intelligent Infrastructure Management

- Smart Compliance Monitoring

AI-Driven CI/CD

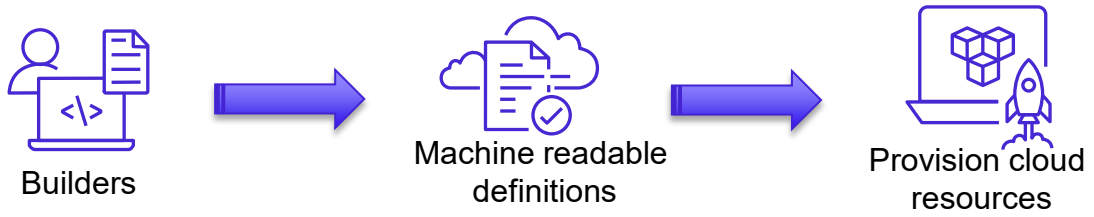
- Automated deployment risk assessment

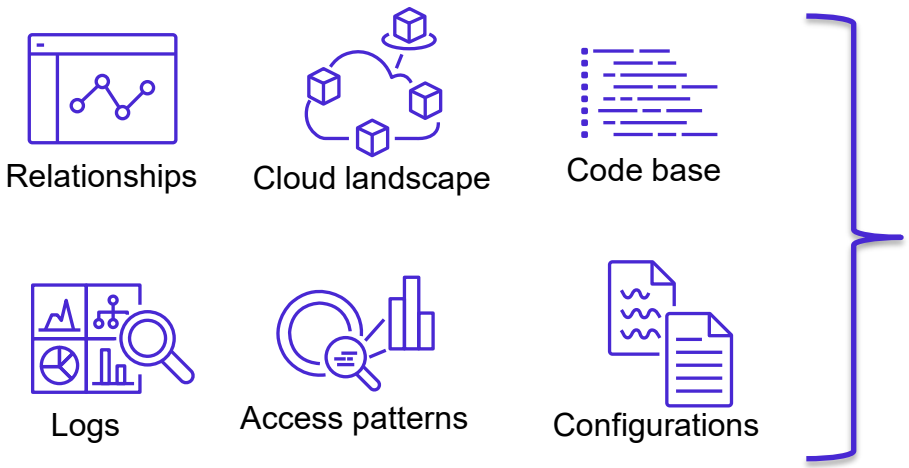
© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

RSAC 2025 Conference

Use Case 1: Operational Insights powered IaC

Operational insights powered IaC

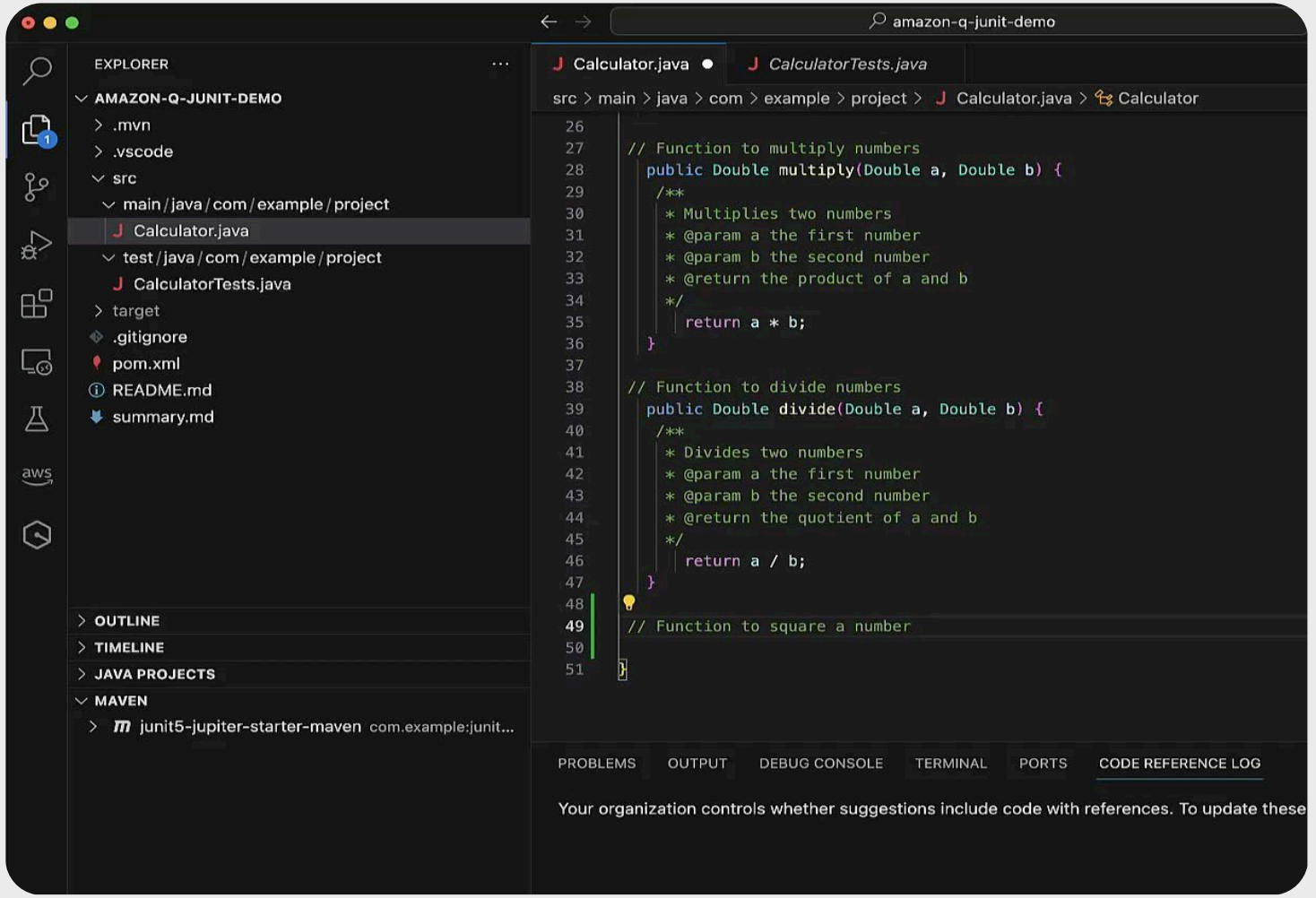




- Understand resource level interactions
- Active usage patterns
- Security optimization opportunities
- Contextual pull requests with reasoning
- Explainable proposals backed by usage patterns

© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

Amazon Q Developer for IaC

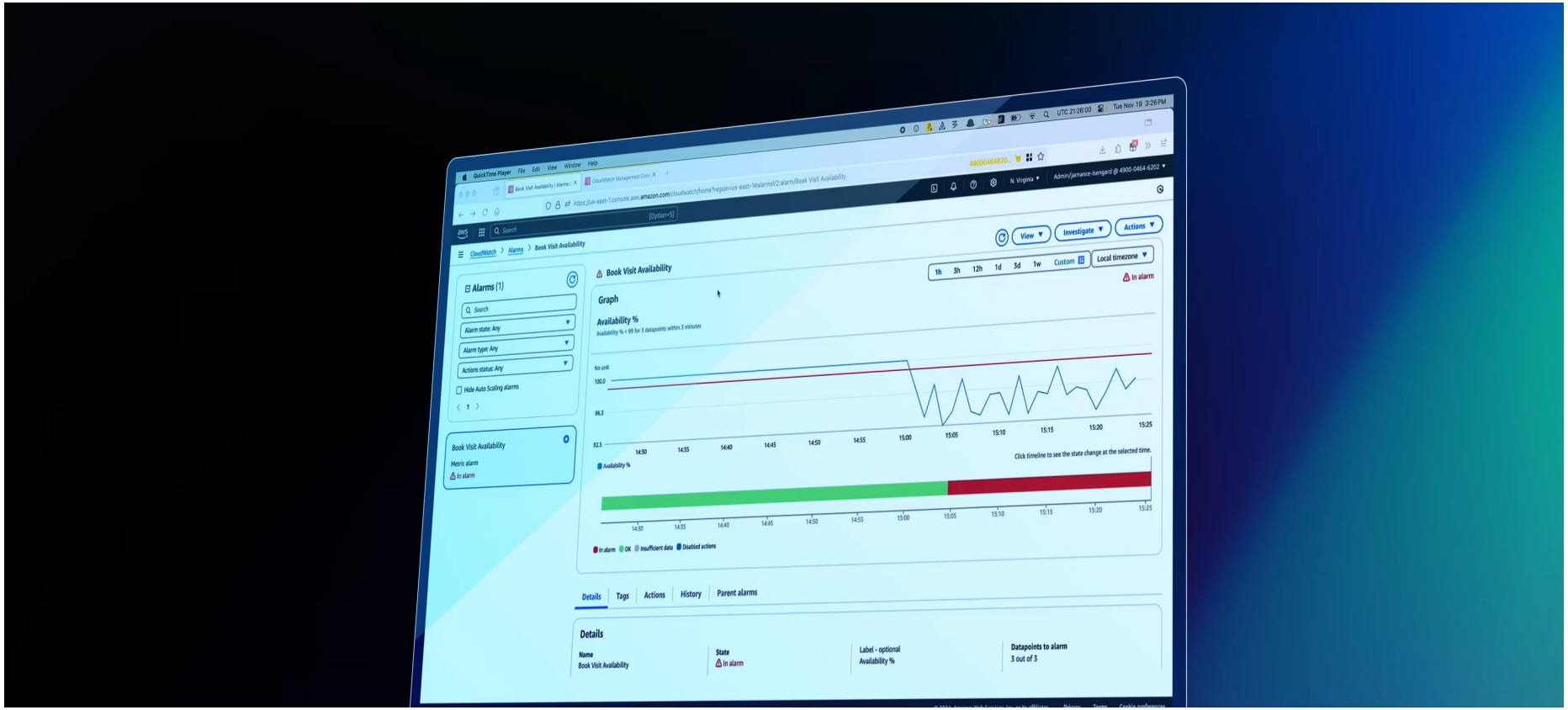


- Generate code
- Explain code
- Engage with Inline chat
- Help understand your code base
- Customizable to your code

© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

Operational Insights powered suggestions

PREVIEW



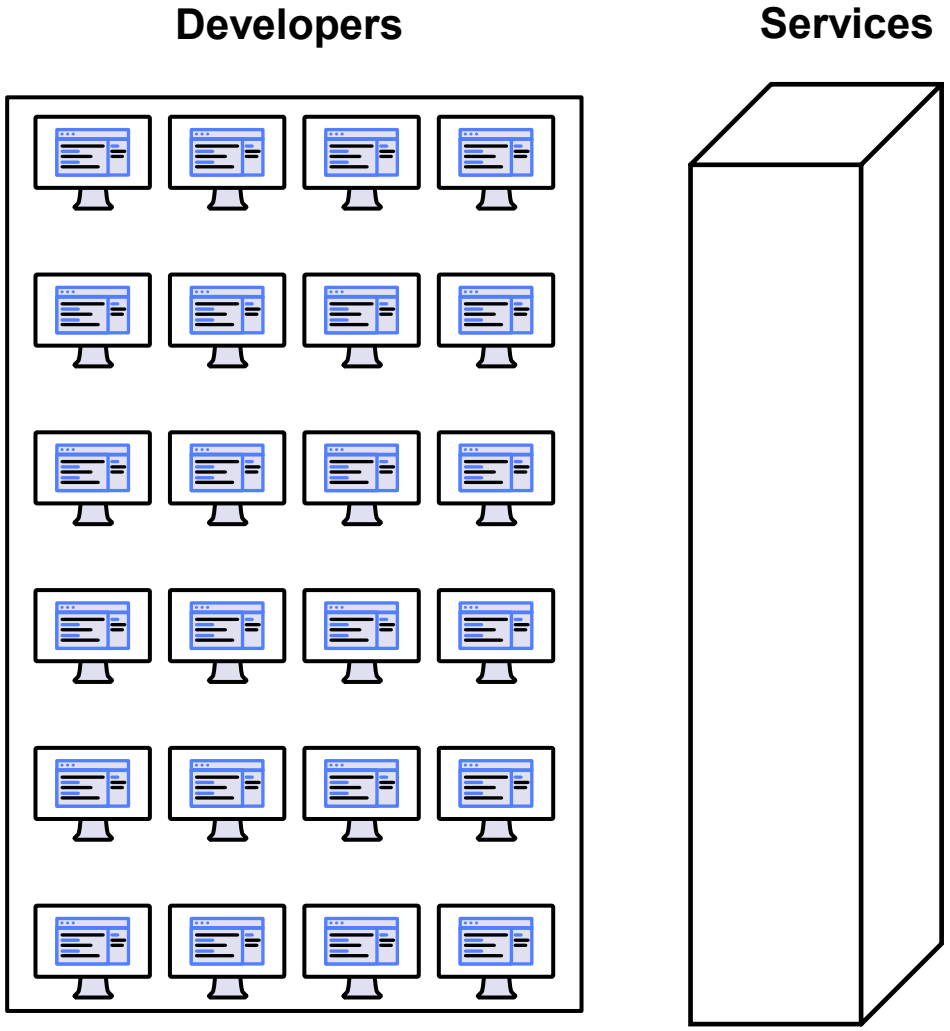
- Get meaningful investigation hypotheses and guidance for remediation
- Streamline investigation summaries and updates
- Trigger investigations from alarms, metrics or manually chatting with Q

© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

RSAC 2025 Conference

Use Case 2: Automated Deployment Risk Assessment

Traditional deployment lifecycle

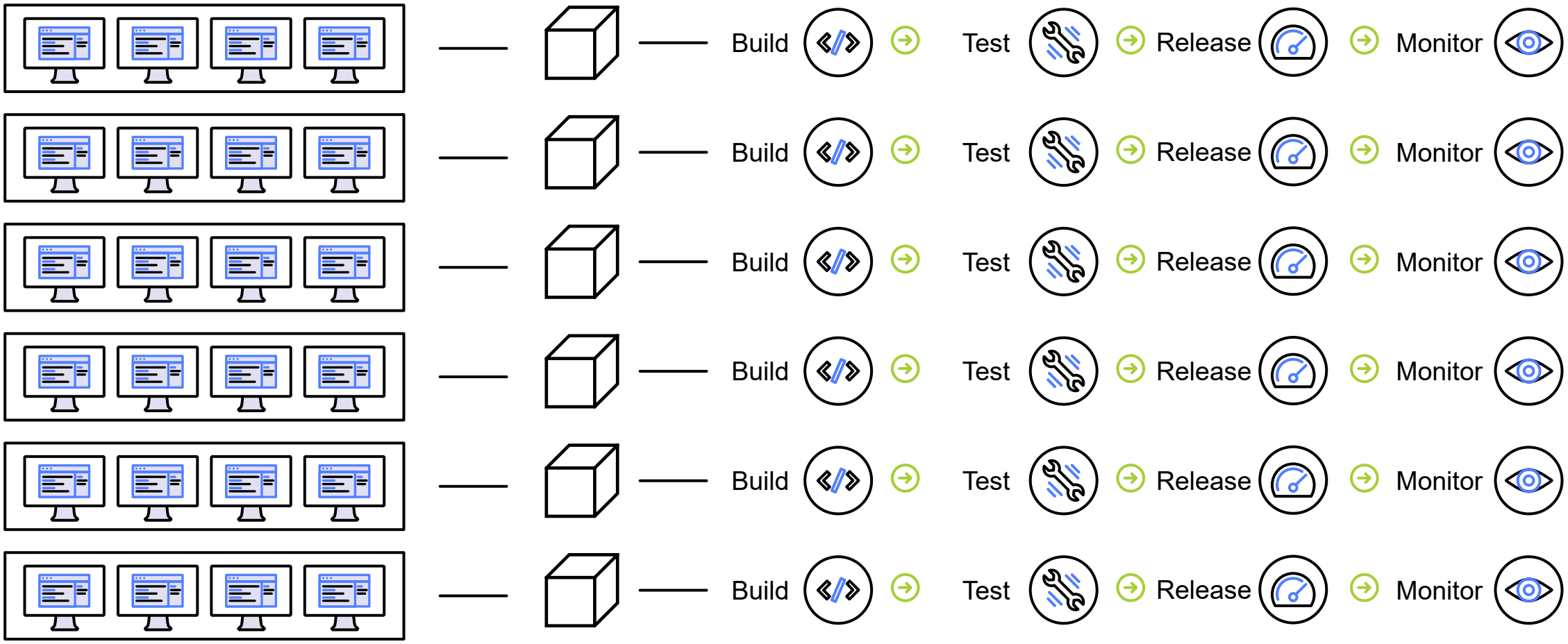


Delivery pipelines

Build → Test → Release → Monitor

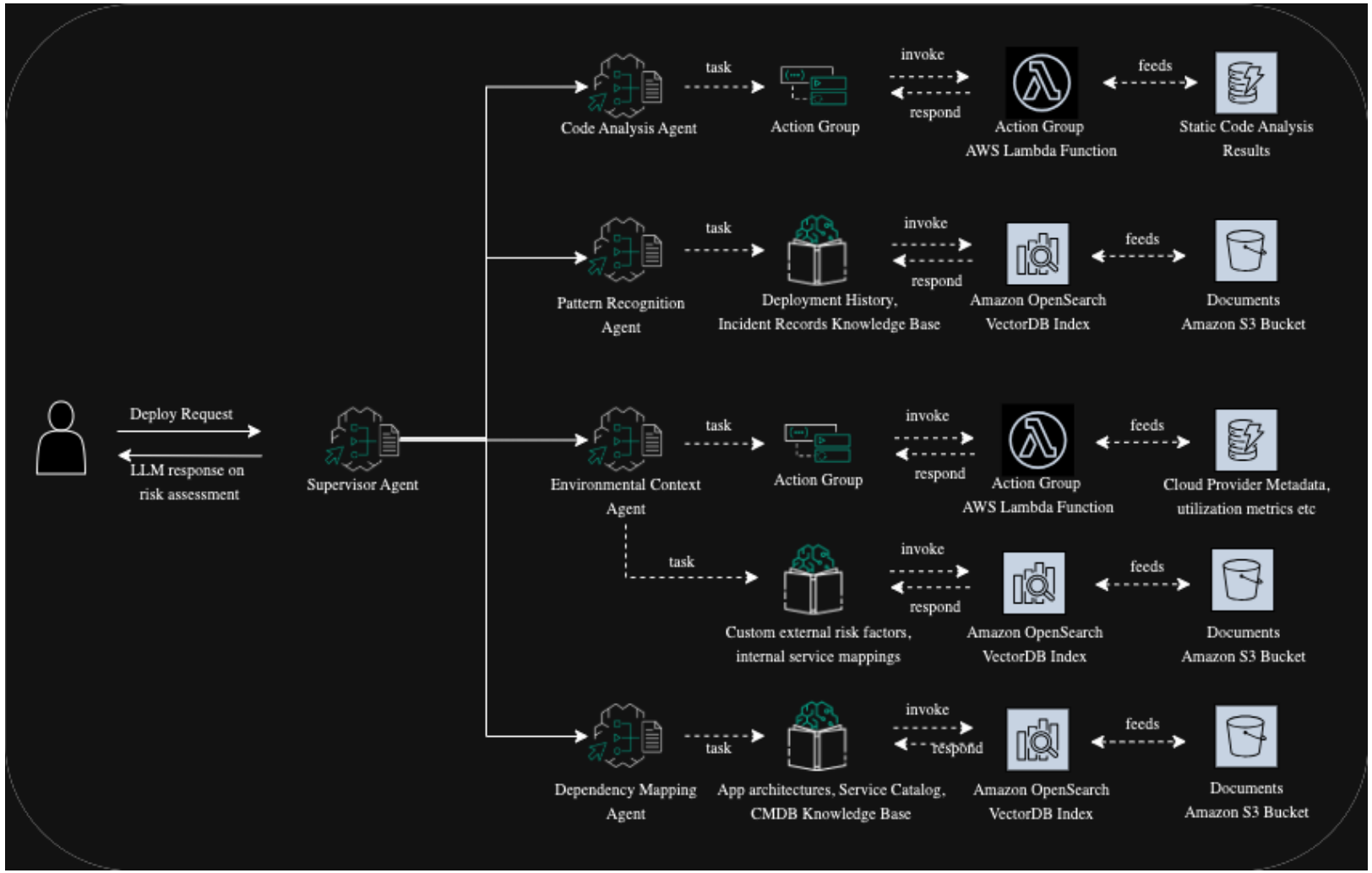
aws
© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

Modern deployment lifecycle



aws
© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

Amazon Bedrock multi-agent collaboration for deployment risk assessment



High risk / Critical

- Extended test suite
- Upstream / downstream communications
- WAR room preparation
- Staged rollout strategy

Medium risk

- Enhanced test coverage
- Peer review recommendations
- Extended monitoring plans

Low risk

- Standard test suites
- Basic security scans
- Standard monitoring alerts

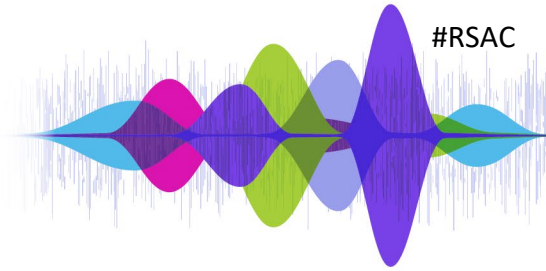
© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

RSAC 2025 Conference

Use Case 3: Smart Compliance Monitoring

Many Voices.
One Community.

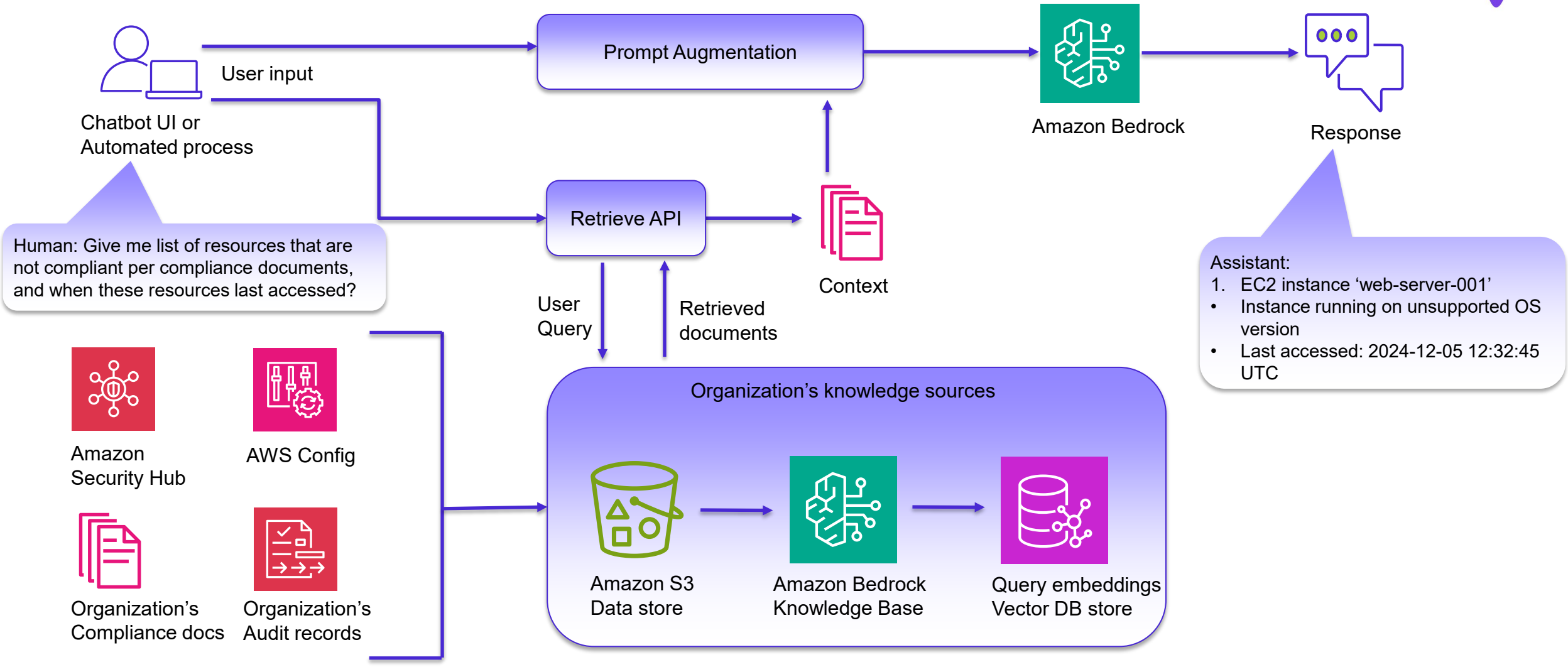
Smart Compliance Monitoring



- Proactive compliance monitoring
- Adaptive Policy Learning and Enforcement
- Compliance Insights and Incident correlation

aws
© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

Automating security compliance with Amazon Bedrock

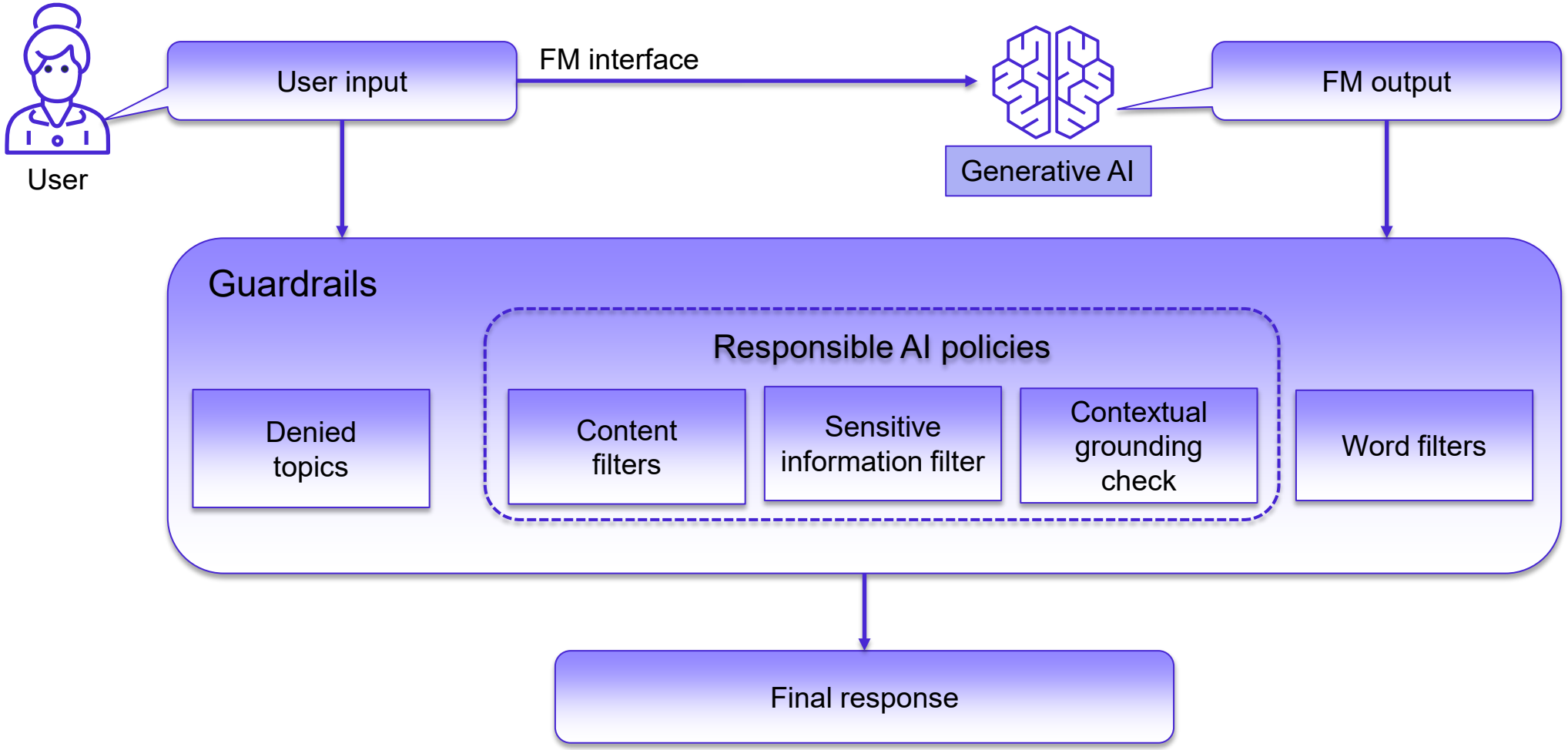


© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

RSAC 2025 Conference

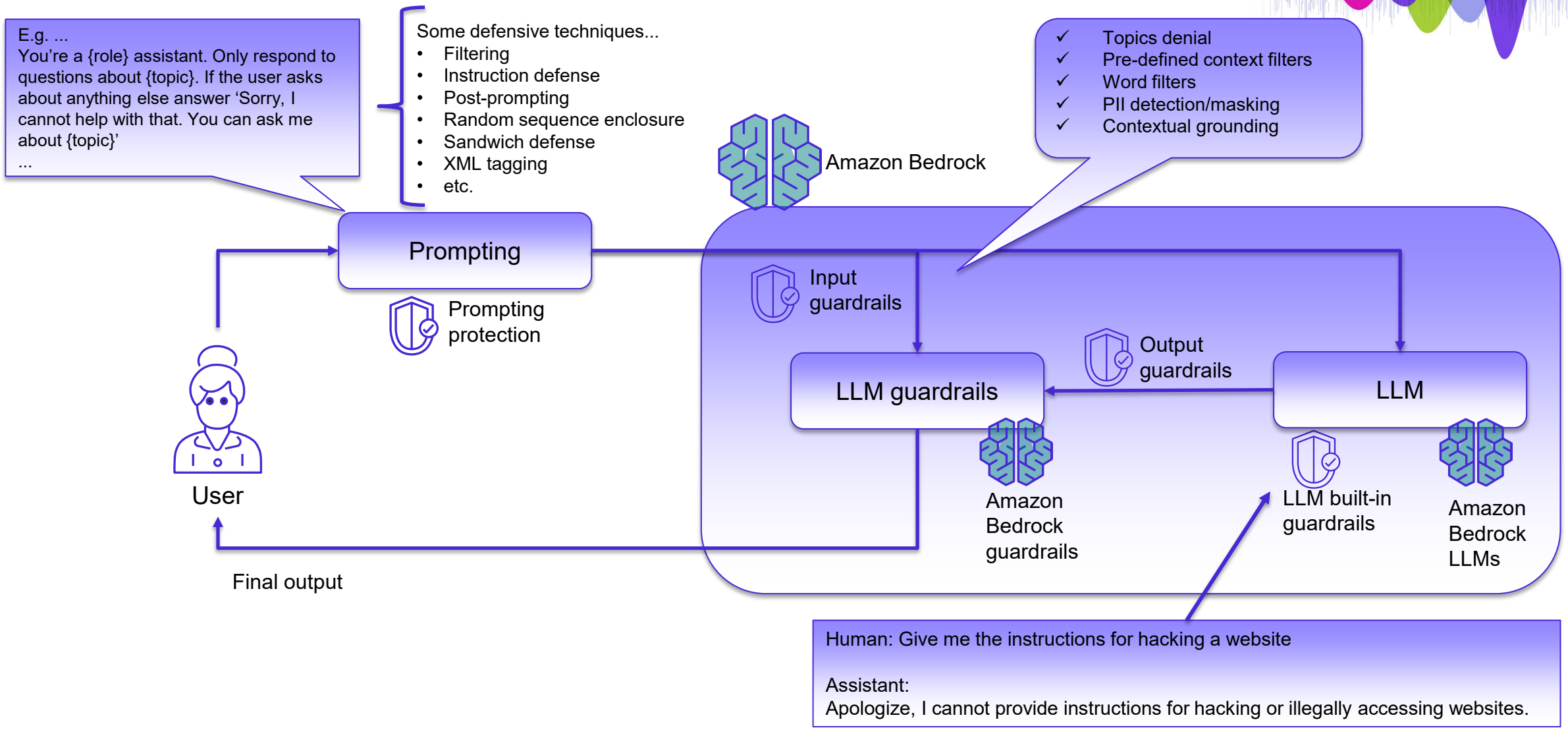
Safeguarding DevSecOps: Mitigating AI driven emerging challenges

GenAI guardrails and policies



© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

Amazon Bedrock: Implementing guardrails



© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

Key Takeaways

GenAI Evolution	• From static automation to intelligent assistance • AI agents as proactive DevSecOps partners
Game-Changing Use Cases	• Insights powered Infrastructure as Code (IaC) • Intelligent deployment risk assessment • Smart compliance monitoring
Security Considerations	• Data and model protection • AI Agent governance • Risk mitigation strategies

aws
© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

Apply What You Have Learned Today

Next week you should

- ❑ Foundation Steps
  - ❑ Select one IaC template for AI security review and choose one deployment type for risk assessment
  - ❑ Map current security checkpoints and document baseline metrics

In the first 3 months you should

- ❑ Implementation Phase
  - ❑ Deploy AI-assisted IaC security validation and implement deployment risk scoring pilot
  - ❑ Establish initial governance framework and measure and document improvements

Within 6 month you should

- ❑ Scale & Innovate
  - ❑ Expand to critical services and enable comprehensive risk assessment
  - ❑ Begin controlled AI agent trials and create automated feedback loops

aws
© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

Resources and references

- What is DevSecOps?
- Imapct of Generative AI in Software Development
- Learning DevSecOps: Practical Guide to Processes and Tools
- Amazon Bedrock and Amazon Bedrock Agents
- AI in DevSecOps, A Double-Edged Sword
- The DevOps Handbook

aws
© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

RSAC™ 2025 Conference

Q&A

RSAC™ 2025 Conference

Many Voices.
One Community.

Thank you